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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,866

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Otis L. Nelson JR.

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7590

09/05/2008

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EXAMINER

TOOMER, CEPHIA D

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/709,866	Applicant(s) NELSON ET AL.	
	Examiner Cephia D. Toomer	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2008 has been entered.
2. This Office action is in response to the amendment filed June 16, 2008 in which claim 1 was amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 4-8, 10-12, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (6,488,723) in view of Lyben (2,849,304).

Nelson discloses a motor fuel additive composition comprising (a) a fuel conditioner component and (b) a detergent component. The fuel conditioner (a) comprises (i) from 2 to 50 percent by weight of a polar oxygenated hydrocarbon compound and (ii) from about 2 to about 50 percent by weight of an oxygenated compatibilizing agent. The detergent component (b) is selected from the group consisting of (i) a reaction product of a substituted hydrocarbon (A) and an amino compound (B), and (ii) a polybutylamine or polyisobutylamine (see abstract). The polar oxygenated hydrocarbon has an average molecular weight of from about 200 to about 500, and acid number of about 25 to 175, and a saponification number of about 75 to about 200 (col. 7, lines 11-33). The oxygenated compatibilizing agent has a solubility parameter of from about 7.0 to about 14.0 and moderate to strong hydrogen-bonding capacity (col. 7, lines 53-62). The hydrocarbon compound (A) of the detergent component is a substituted hydrocarbon of the formula R_1-X wherein R_1 is a hydrocarbyl radical having a molecular weight in the range of about 150 to 10,000 and X is selected from the group consisting of halogens, succinic anhydride and succinic dibasic acid (col. 4, lines 52-65). The amino compound (B) is of the formula $H-(NH-(A)_m)_n-Y-R_2$ wherein Y, A, m, n, and R_2 are identical to those in the instant claim 8 (col. 5, lines 1-21). The polybutylamine or polyisobutylamine is identical to that in instant claim 8 (col. 6, lines 30-46). Further, the composition includes other additives such as methyl tertiary butyl ether (MTBE) and ethyl tertiary butyl ether (ETBE), alcohols such as methanol or

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ethanol, and additives that are “typically employed in motor fuels” such as a common anti-knock additive, tetraethyl lead (col. 9, lines 56-60). Nelson also discloses examples wherein the additive composition was added to a base fuel in amounts between 40 ppm and 1000 ppm (col. 10, lines 44-50; col. 11, lines 14-20).

Nelson is silent with respect to the composition comprising a lead scavenger compound.

Lyben discloses leaded motor fuels containing anti-knock agents such as tetraethyl lead, wherein a means for removing the lead-containing products of combustion known in the art includes providing an alkyl halide lead scavenger such as ethylene dibromide and ethylene dichloride. Further, the process known as scavenging proves to be beneficial in that the lead scavengers, when co-present with the anti-knock agents reacted in a combustion chamber of an engine with the combustion products of the antiknock agents to form volatile lead halides, which in turn are efficiently removed from the combustion chamber during the exhaust cycle (col. 1, lines 20-40).

It would therefore have been obvious to one of ordinary skill in the art to combine the teachings of Nelson and Lyben, and include ethylene dibromide or dichloride as a lead scavenger in the additive composition of Nelson, which contains tetraethyl lead, an anti-knock agent. The scavenger would be beneficial to the composition in aiding removal of lead-containing products of combustion.

Regarding claims 6 and 7, although Nelson and Lyben do not disclose the addition of the additive composition to the base fuel simultaneously or after other additives, it is noted that “[E]ven though product-by-process claims are limited by and

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defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed addition of the additive composition to the base fuel simultaneously or after other additives and given that Nelson and Lyben meet the requirements of the claimed composition, Nelson and Lyben clearly meet the requirements of present claims 6 and 7.

4. Claims 2-3, 9, 13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Lyben, and further in view of Carlson (3,083,088).

The disclosure of Nelson and Lyben is above is herein incorporated by reference.

Both Nelson and Lyben are silent with respect to the amount of alkyl lead compound included in the composition.

Carlson discloses a motor fuel composition including alkyl lead anti-knock agents such as tetraethyl lead, included in low amounts within the range of about 0.5 to about 3.0 grams per gallon. The effectiveness of tetraethyl lead to raise the octane number

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and suppress knocking decreases with increasing quantities. Therefore, a small amount in the range disclosed proves to be beneficial to the composition (col. 1, lines 10-35).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to combine the teachings of Nelson, Lyben, and Carlson in order to utilize the benefits of tetraethyl lead at low amounts.

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Carlson (3,083,088).

The disclosure of Nelson is above and is herein incorporated by reference.

Nelson is silent with respect to the composition comprising a lead scavenger compound, and the amount of anti-knock additive, tetraethyl lead, included in the composition.

Carlson discloses a motor fuel composition including alkyl lead anti-knock agents such as tetraethyl lead, and alkyl halide lead scavengers such as ethylene dibromide and dichloride. Tetraethyl lead is included in low amounts within the range of about 0.5 to 3.0 grams per gallon. The effectiveness of tetraethyl lead to raise the octane number and suppress knocking decreases with increasing quantities. Therefore, a small amount in the range disclosed proves to be beneficial (col. 1, lines 10-35). The lead scavengers, such as ethylene dibromide and ethylene dichloride, impart useful properties to the fuel in its use in internal combustion engines (col. 3, lines 56-71).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to combine the teachings of Nelson and Carlson in order to utilize the benefits of alkyl lead anti-knock agents and alkyl halide lead scavengers as disclosed in Carlson.

Regarding claims 6 and 7, although Nelson and Carlson do not disclose the addition of the additive composition to the base fuel simultaneously or after other additives, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed addition of the additive composition to the base fuel simultaneously or after other additives and given that Nelson and Carlson meet the requirements of the claimed composition, Nelson and Carlson clearly meet the requirements of present claims 6 and 7.

3. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues there is nothing in Nelson that discloses, teaches or suggests to one skilled in the art how to modify the reference for introducing the alkyl lead and the additive package simultaneously with, or after other additives into the fuel as opposed to adding these components to the fuel before introduction of other additive packages. Applicant argues that by practicing the above method of addition that the amount of alkyl lead required while maintaining the desired level of anti-knock performance and ORI reduction is realized with lower amounts of alkyl lead when it is mixed into the additive package of the claimed invention.

Nelson sets forth that the additive package of his invention is introduced into the fuel in the same manner as that of the present invention. With respect to the alkyl lead being present in the fuel per se as opposed to the additive package, the skilled artisan recognizes that the additional additives disclosed at col. 9, lines 57-63 may be introduced as an additive package, more particularly in the additive package set forth in Nelson.

Applicant has provided no examples to support his argument. The examples set forth in the specification do not show what Applicant is alleging. Furthermore, it would be reasonable to expect that less alkyl lead would be required because the fuel conditioner reduces the deposits in the intake system and combustion chamber thus requiring less octane enhancement.

Applicant argues that Lyben teaches away from the use of the claimed lead compounds. Applicant argues that Lyben fails to teach the claimed lead compounds

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and also fails to teach or suggest the unexpected ability to reduce the amount of alkyl lead compound required while retaining desired levels of ORI reduction and antiknock.

Nelson clearly teaches that alkyl lead compounds may be present in his composition. Lyben teaches that it is well known that if the fuel contains alkyl lead compounds that means must be provided to remove the lead-containing products of combustion. Therefore, the skilled artisan having Nelson and Lyben before him/her would recognize that if alkyl lead is present in the fuel then lead scavengers must be present in the fuel. As stated above, the fuel conditioners of Nelson reduce deposits or at least modify the composition of deposits which tend to cause engine ORI. Given this teaching, it would be reasonable to expect that less alkyl lead would be required.

Lyben teaches that the only scavengers that have enjoyed commercial success have been ethylene dibromide and ethylene dichloride. Lyben teaches that the scavenger of his invention has improved scavenging properties over the previous scavengers. However, he does not teach that his scavengers replaced the commercially successful ethylene dihalides.

Applicant argues that Carlson teaches away from the sole use of the lead compounds claimed by Applicant's invention and how to reduce the amount of these alkyl lead compounds without the addition of other anti-knock compounds.

Applicant's claims are open to the inclusion to other components and are not limited to a single anti-knock compound. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g.,

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Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). Carlson clearly sets forth that it is well known to employ 0.5 to about 3.0 g/gal of alkyl lead anti-knock agents, which is within applicant's claimed range.

Applicant argues that there is no statutory requirement for examples and that "...reasonable to expect..." is not a proper basis for a rejection.

The examples do fail to disclose when the alkyl lead is added and they fail to compare the fuel composition of the present invention to a fuel wherein the lead is present in the fuel and not the additive package. Nelson teaches that the fuel conditioner of his invention reduces or at least modifies the composition of deposits which tend to cause ORI thereby reducing ORI and the need for increased amounts of alkyl lead. Therefore, the skilled artisan would have the reasonable expectation that by Nelson reducing ORI that reduced amounts of alkyl lead would be required to decrease knocking.

4. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cephia D. Toomer/
Primary Examiner
Art Unit 1797

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